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**Amendment and Response**

Applicant(s): Yates et al.

Serial No.: 10/770,797

Confirmation No.: 1476

Filed: February 3, 2004

For: COMPOSITIONS AND METHODS FOR REMOVING ETCH RESIDUE**Amendments to the Claims**

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1-25. (Canceled)

26. (Canceled)

27. (Currently Amended) A composition for use in integrated circuit fabrication, the composition comprising:

at least one fluoride ion source comprising an organic cation; and

at least one organic solvent,

wherein the composition is a cleaning composition and is free of ~~includes no more than about 3~~ wt-% water.

28. (Original) The composition of claim 27 wherein the fluoride ion source includes F<sup>-</sup> ions or HF<sub>2</sub><sup>-</sup> ions.

29. (Original) The composition of claim 27 wherein the fluoride ion source includes a cation selected from the group consisting of an organoammonium cation, a pyridinium cation, a quaternary organophosphonium cation, a quaternary organoarsonium cation, a quaternary organostibonium cation, a triorganocarbonium cation, and an organosulfonium cation.

30. (Original) The composition of claim 27 wherein the fluoride ion source includes a quaternary ammonium fluoride.

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31. **(Original)** The composition of claim 27 wherein the composition is in contact with a substrate having an etch residue on at least one surface.
32. **(Original)** The composition of claim 31 wherein the etch residue comprises polymeric etch residue.
33. **(Original)** The composition of claim 31 wherein the composition is effective to remove at least a portion of the etch residue.
34. **(Original)** The composition of claim 27 wherein the composition is in contact with a semiconductor structure having an etch residue on at least one surface.
35. **(Original)** The composition of claim 34 wherein the composition is effective to remove at least a portion of the etch residue.
36. **(Original)** The composition of claim 27 wherein the composition is in contact with a semiconductor structure having an etch residue on at least a portion thereof and comprising a layer comprising at least a portion of exposed metal.
37. **(Original)** The composition of claim 36 wherein the composition is effective to remove at least a portion of the etch residue and substantially none of the exposed metal.
38. **(Currently Amended)** A composition for use in integrated circuit fabrication, the composition comprising:
- at least one fluoride ion source comprising an organic cation; and
  - at least one organic solvent,

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wherein the composition is a cleaning composition effective to remove etch residue and is free of water.

39. **(Original)** The composition of claim 38 wherein the fluoride ion source includes  $F^-$  ions or  $HF_2^-$  ions.

40. **(Original)** The composition of claim 38 wherein the fluoride ion source includes a cation selected from the group consisting of an organoammonium cation, a pyridinium cation, a quaternary organophosphonium cation, a quaternary organoarsonium cation, a quaternary organostibonium cation, a triorganocarbonium cation, and an organosulfonium cation.

41. **(Original)** The composition of claim 38 wherein the fluoride ion source includes a quaternary ammonium fluoride.

42. **(Currently Amended)** A composition for use in integrated circuit fabrication, the composition consisting essentially of:

at least one fluoride ion source comprising an organic cation; and

at least one organic solvent,

wherein the composition is a cleaning composition.

43. **(Original)** The composition of claim 42 wherein the fluoride ion source is present in the composition in an amount of no greater than about 1.0 wt-%.

44. **(Original)** The composition of claim 42 wherein the fluoride ion source is present in the composition in an amount of no greater than about 0.5 wt-%.

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45. **(Original)** The composition of claim 42 wherein the fluoride ion source is present in the composition in an amount of no greater than about 0.1 wt-%.
46. **(Original)** The composition of claim 42 wherein the fluoride ion source is present in the composition in an amount of no greater than about 0.01 wt-%.
47. **(Currently Amended)** A composition for use in integrated circuit fabrication, the composition consisting of:  
at least one fluoride ion source comprising an organic cation; and  
at least one organic solvent,  
wherein the composition is a cleaning composition.
48. **(Original)** The composition of claim 47 wherein the fluoride ion source includes F<sup>-</sup> ions or HF<sub>2</sub><sup>-</sup> ions.
49. **(Original)** The composition of claim 47 wherein the fluoride ion source includes a cation selected from the group consisting of an organoammonium cation, a pyridinium cation, a quaternary organophosphonium cation, a quaternary organoarsonium cation, a quaternary organostibonium cation, a triorganocarbonium cation, and an organosulfonium cation.
50. **(Original)** The composition of claim 47 wherein the fluoride ion source includes a quaternary ammonium fluoride.